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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111.**

**APPLICATION NUMBER: 60/519,317
FILING DATE: *November 12, 2003***

Certified by



Jon W Dudas



Acting Under Secretary of Commerce
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and Acting Director of the U.S.
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PTO/SB/16 (5-03)

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)					
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<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max) A METHOD AND APPARATUS FOR SUPPORTING POP-UP MENUS AND MULTI-PAGE MENUS WITH SEAMLESS VIDEO PLAYBACK					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number		21611		Place Customer Number Bar Code Label here	
OR Type Customer Number here					
<input type="checkbox"/> Firm or Individual Name					
Address		Snell & Wilmer LLP			
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ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification		Number of Pages 12		<input type="checkbox"/> CD(s), Number	
<input type="checkbox"/> Drawing(s)		Number of Sheets		<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Application Data Sheet		See 37 CFR 1.76			
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees				FILING FEE AMOUNT (\$)	
<input checked="" type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number		19-2814		\$160.00	
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE

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949-253-4920

Date

11-12-03

REGISTRATION NO.

25,124

(if appropriate)

Docket Number:

17366-1650

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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P19LARGE/REV05

**A METHOD AND APPARATUS FOR SUPPORTING POP-UP MENUS
AND MULTI-PAGE MENUS WITH SEAMLESS VIDEO PLAYBACK**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention is directed to extending a framework of an interactive graphics format and decoder model to support both Pop-up menus and Multi-Page menus without interruption to the audio-video playback.

Description of Related Art

A digital video broadcast standard (DVB-SUB) has been used as a pre-packaged consumer movie distribution format. Recently there has been development of a new BD-ROM format with the blue BLU-ray Disk Founders (BDF) defining syntax and semantics of data streams and associated decoding models for presentation of graphics and interactive graphics. Development of shorter wavelength lasers such as a blue laser diode have increased the storage capacity of recording mediums such as a BD-ROM disk.

There is still a desire in this art to be able to provide improved editorial features to take advantage of this increased storage capacity without interfering with audio-video playback of stored data such as a movie.

SUMMARY OF THE INVENTION

The innovations in our present invention are designed to extend the BD-ROM High-Definition Movie Mode (HDMV) Interactive Graphics format that is used in the BD-ROM standard, and more particularly, to provide a method and apparatus to extend, with low impact, the BD-ROM standard to provide support for Pop-up menus and Multi-Page menus which will not interrupt or interfere with the ability to provide audio-video playback.

The ability to provide Pop-up menus and Multi-Page menus which will not cause interruption to video playback can be used by content providers to provide additional features that will clearly differentiate a DVD video title from BD-ROM titles and will enable the creation of new interaction models that can be created in BD-ROM titles which cannot be realized in DVD-video titles.

The present invention can provide editorial abilities to permit the content provider to mix Pop-up menus and normal display menus in one interactive graphic stream and can further support a page timeout for Pop-up menus (for example, based on a period of time in which there is no user interaction) so that the content provider can create Pop-up menus which will disappear if they are not used for a period of time. The features of the present invention can expand both the structure and framework of the BD-ROM HDMV interactive graphic streams so that menu structures will be overlaid on the video and will not cause an interruption to the audio-video playback.

BRIEF DESCRIPTION OF PREFERRED EMBODIMENT

Please refer to the attached document for a more detailed description of the innovation.

Panasonic Hollywood Laboratory

Proposal:

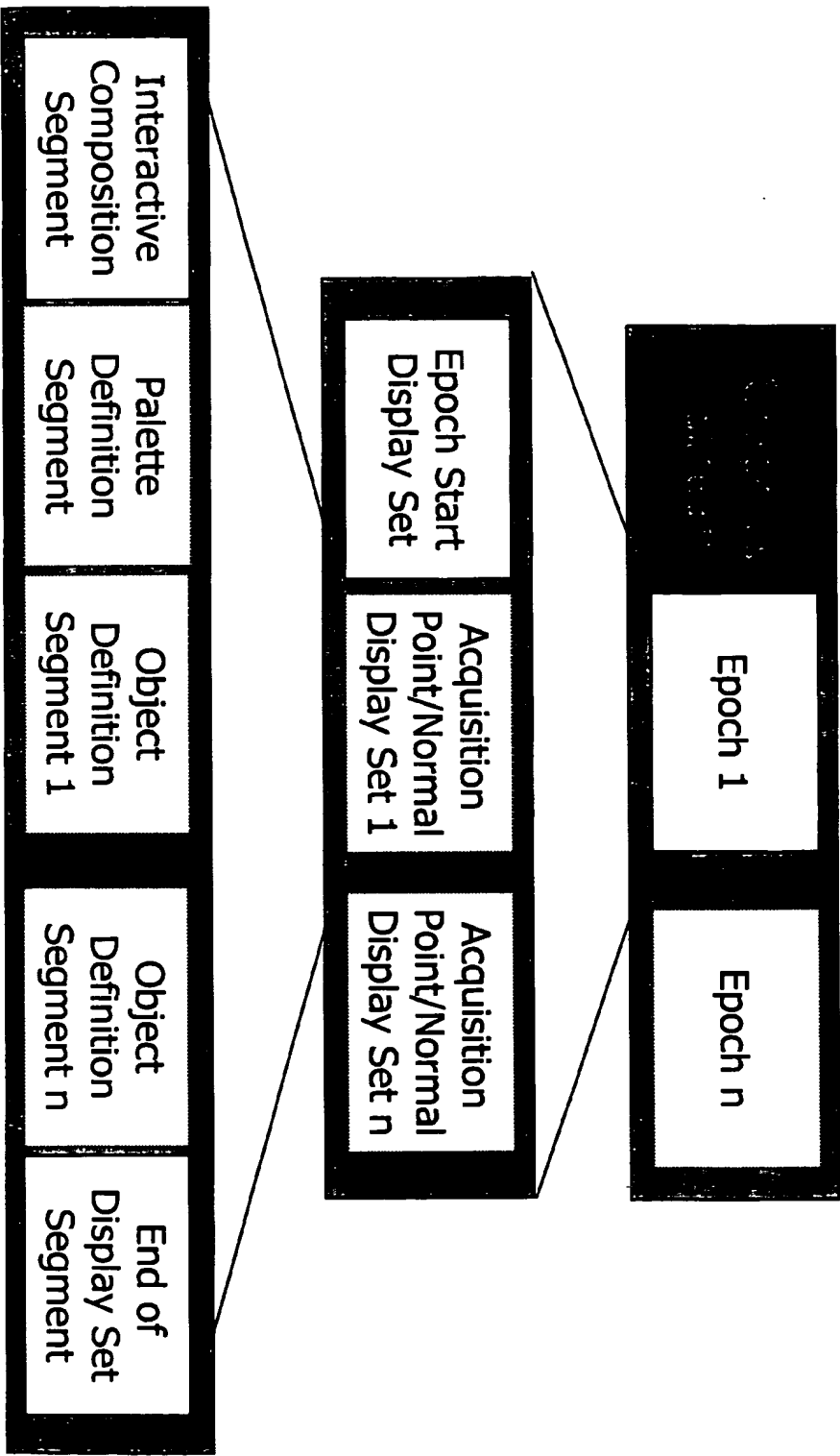
**Extension to BD-ROM High-Def Movie Mode
Interactive Graphics extension to support
Multi-Page and Pop-Up Menus with Seamless
Video playback
11/11/03**

Basic Proposal

- **Expand upon the structure and framework of BD-ROM HDMV Interactive Graphics streams to support Pop-up Menus overlaid without interruption to AV playback.**
 - The content provider can then mix Pop-up Menus and normal displayed menus in one Interactive Graphics stream.
 - Support page-time out for Pop-up Menus (based on length of no user Interaction) so that content provider can create Pop-up Menus which disappear if they are not used for a period of time.
- **Expand upon the structure and framework of BD-ROM HDMV Interactive Graphics streams to support Multi-page menus without interruption to AV Playback.**
 - The content provider can create Menu Structures which are overlaid on Video and do not cause an interruption to AV playback.

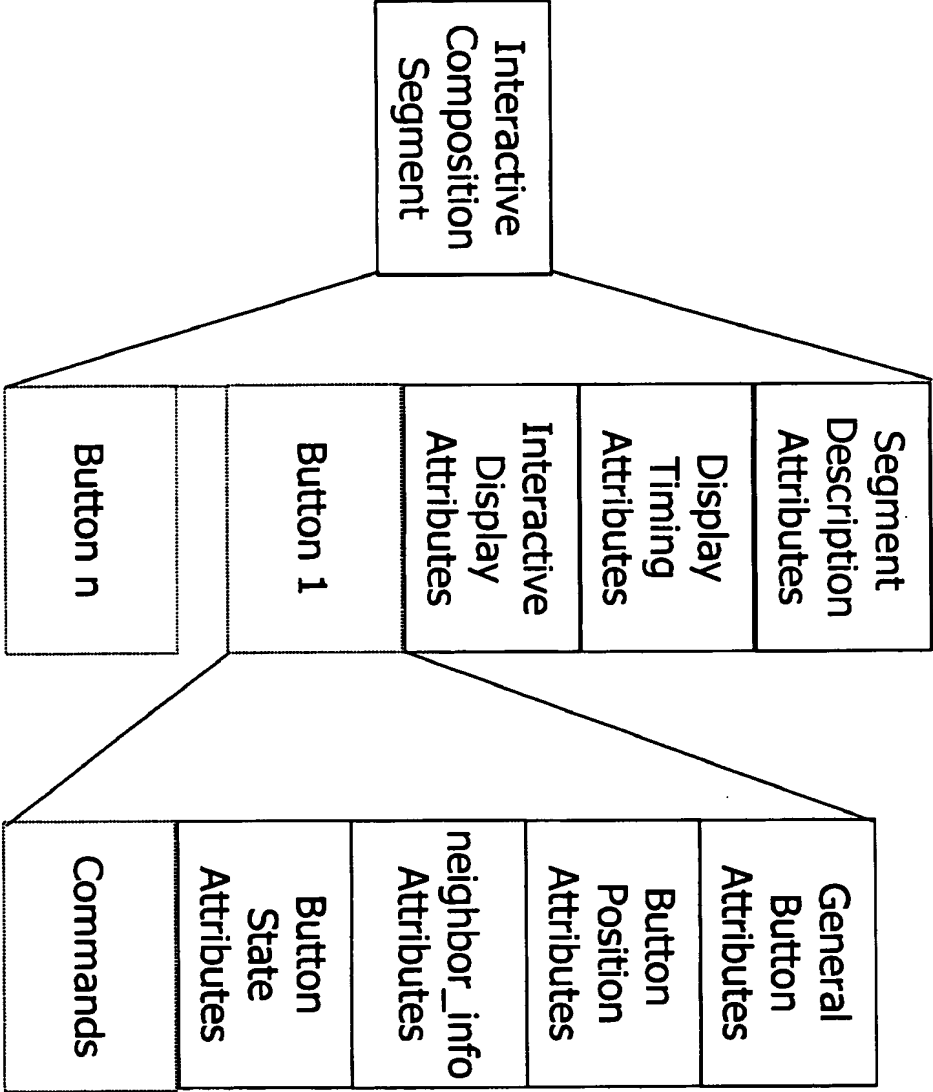
Overview of Current BD-ROM Interactive Graphics Stream Structure

- ☐ Epochs are a unit of seamless playback.
- ☐ All Graphical Objects are preloaded (decoded and stored in a buffer) prior to Display.

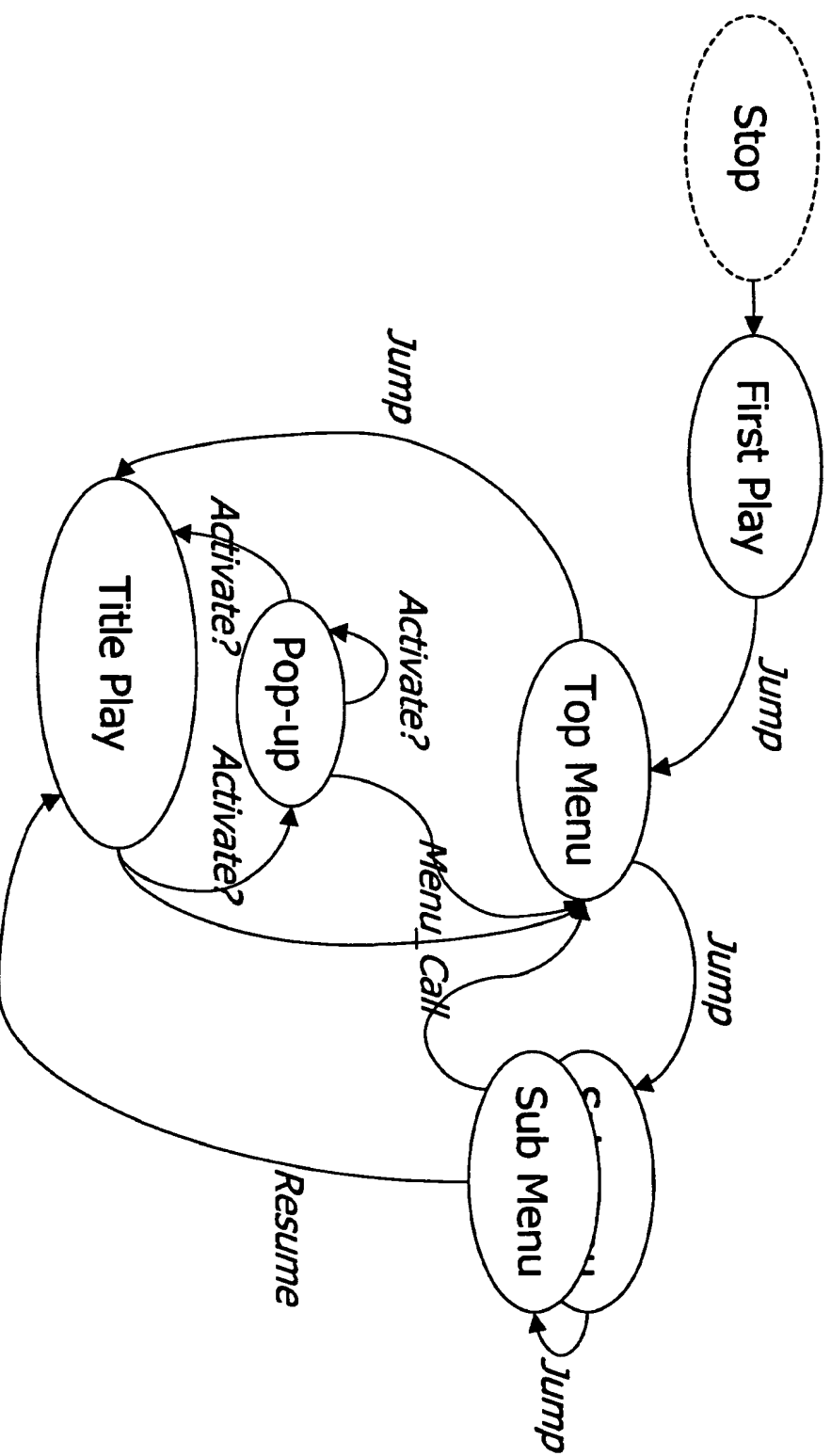


Overview of Current BD-ROM Interactive Composition Structure

Interactive Composition Segment is currently designed to represent
ONE PAGE ONLY.

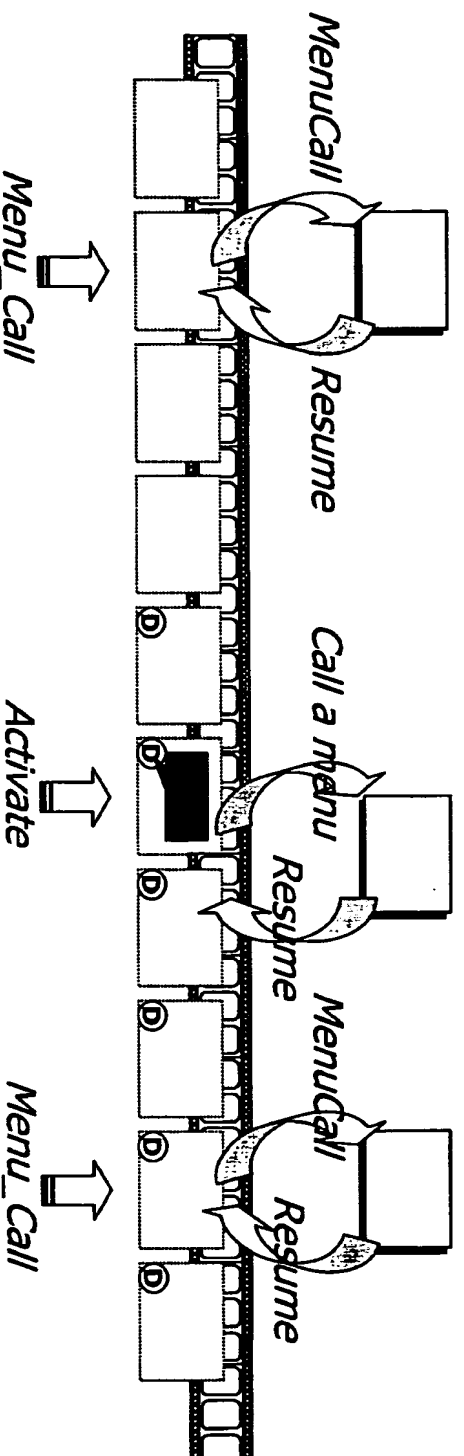


Proposal: Pop-up Menu State Transition



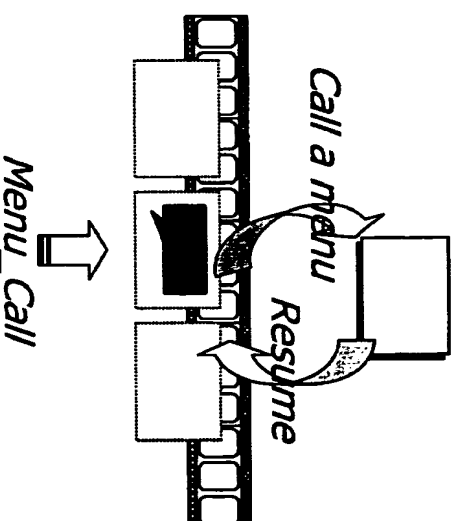
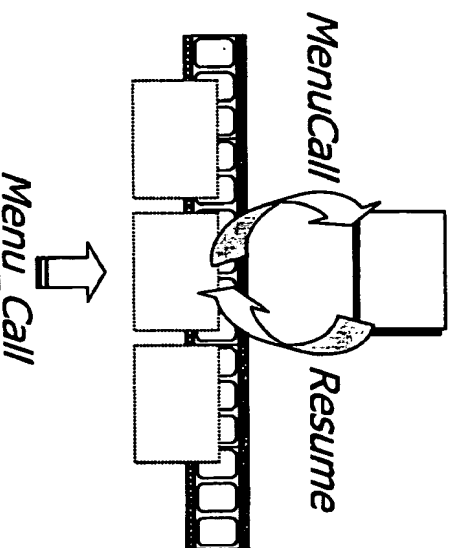
User Activation of Pop-up Menu: Example 1

- ❑ **Transition to a Pop-up menu is achieved via the button “activate” UOP.**
- ❑ **The content provider creates a “(D)” like button or an invisible button for access to the Pop-up Root menu; when the user activates this button, the Pop-up Root Menu appears.**
- ❑ **A Pop-Up Menu can call the Top Menu (transition to Menu).**
- ❑ **Menu_Call UOP is available during an a Pop-up Menu Epoch.**
- ❑ **NOTE: A Pop-up Menu can be created which is valid for the entire movie.**



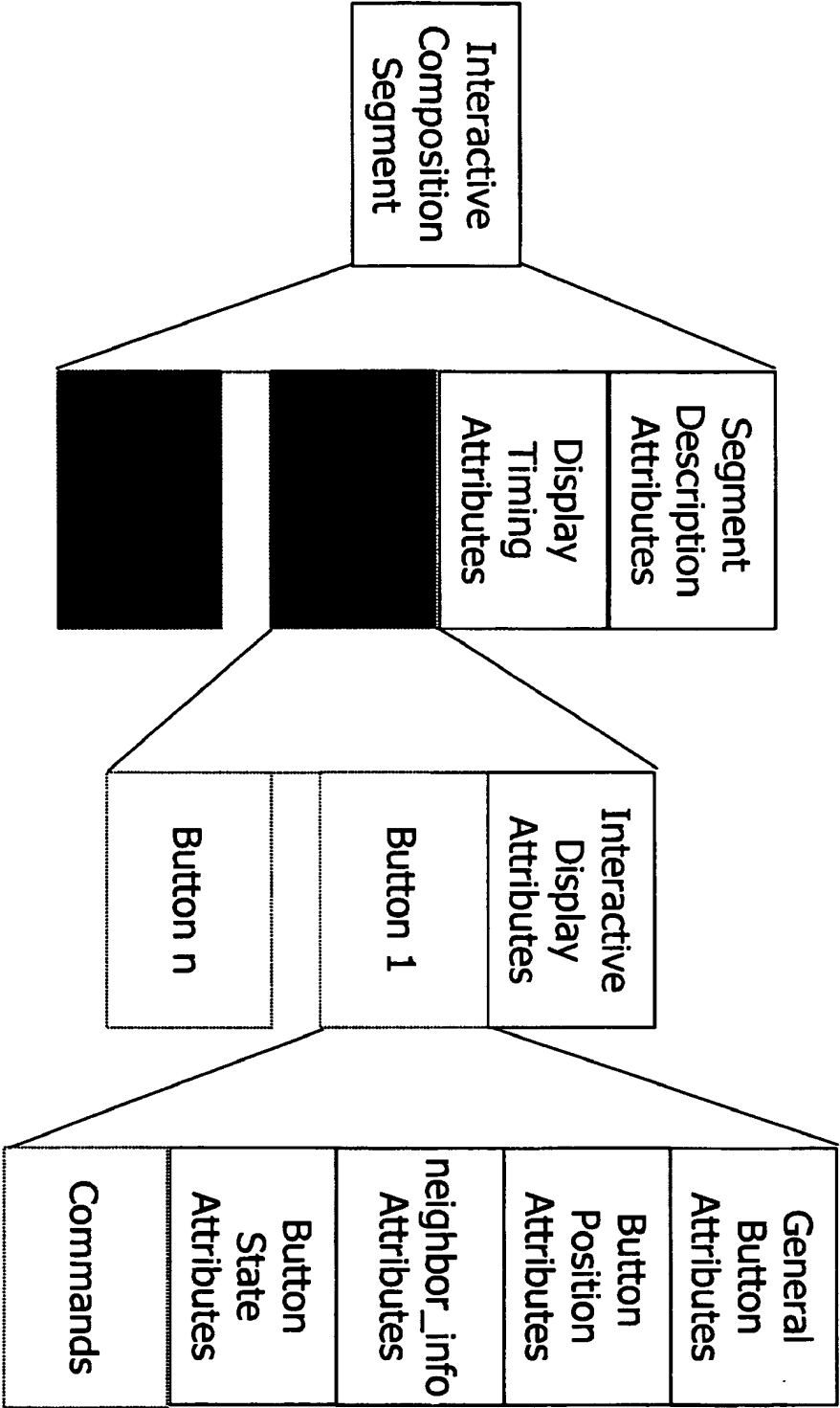
User Activation of Pop-Up Menu: Example 2

- ☐ Pop-up Menu is a menu function
- ☐ When there is a Pop-Up Menu in a title and the user calls "Menu_Call" a Pop-Up Menu appears on a screen
- ☐ When there is no Pop-Up menu in a title and the user calls "Menu_Call" an ordinary menu shows with transition
- ☐ A pop-up menu can call the Top Menu (transition to Menu)
- ☐ NOTE: A Pop-up Menu can be created which is valid for the entire movie.



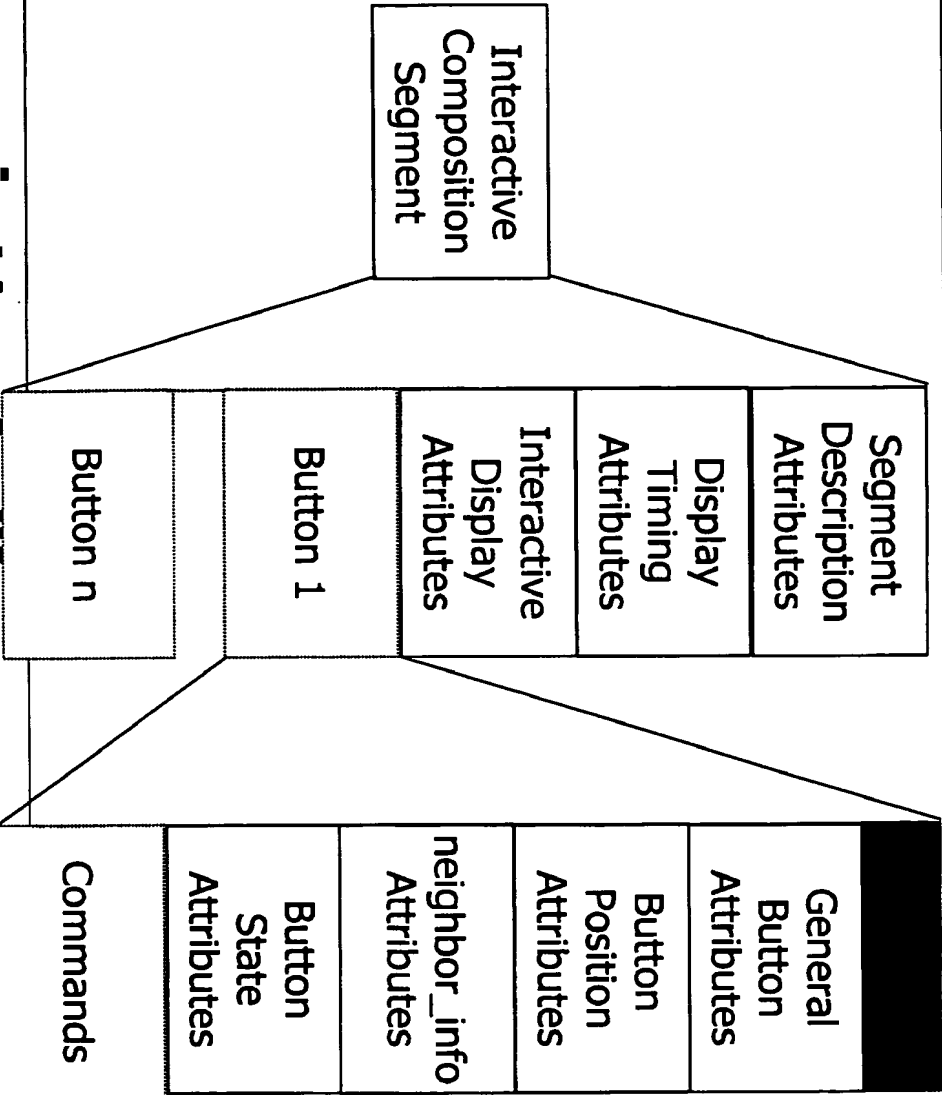
Support of Multiple Pages - Example 1

- ❑ Each Page is described explicitly.
- ❑ The Page which is being displayed is changed using a new Button command (change_page(page_number)).



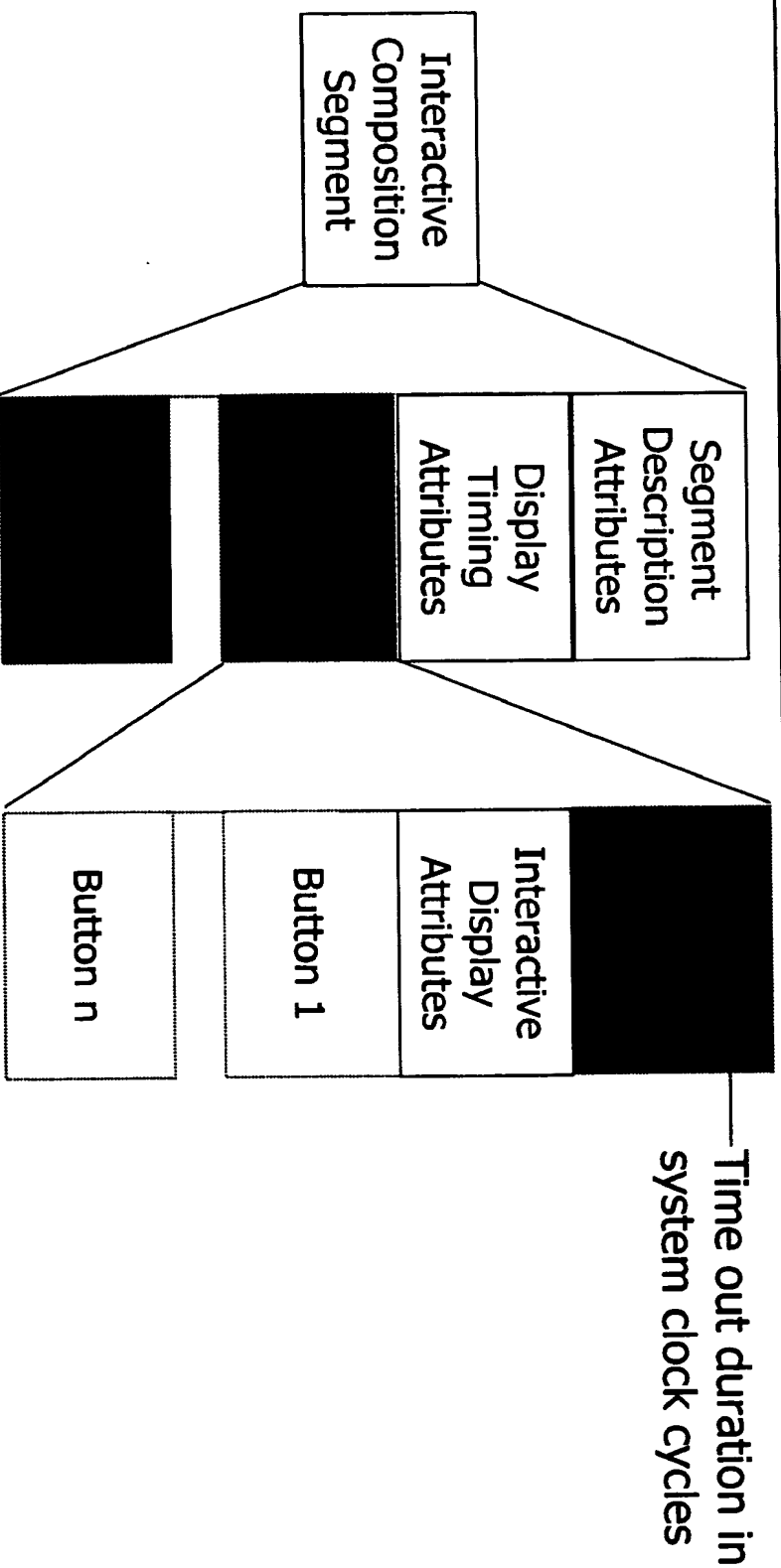
Support of Multiple Pages - Example 2

- ☐ Buttons have a (visible/invisible) state (Pages not explicitly described).
- ☐ Button visibility is changed using a new Button command (set_button_visibility(set_boolean, button_number)).



Page Timeout: Example

- ❑ **Support page timeout based on duration of no user interaction.**
 - At timeout, execute button (contains command such as jump to page)
 - This provides framework for use in Pop-up Menus, where transition back to "D" like button or invisible button occurs automatically after a period of no user interaction.



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